



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,843	08/26/2003	Wenjun Li	926512-101000	7028

7590 07/26/2006

Barnes & Thornburg LLP
James B. Conte
P.O. Box 2786
Chicago, IL 60690-2786

EXAMINER

FREAY, CHARLES GRANT

ART UNIT	PAPER NUMBER
----------	--------------

3746

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary

Application No. 10/649,843		Applicant(s) MONROE ET AL	
Examiner Charles G. Freay		Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-14, 17, 20 and 21 is/are rejected.
- 7) ☒ Claim(s) 4, 15, 16, 18, 19 and 22 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/2003</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 is vague and indefinite. It is unclear what the air flowing “directly past the pump assembly” means. Is the flow just adjacent to the pump, within the housing, does the air have to travel through the pump or is it bypassing the pump?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Price (USPN 5,606,756) in view of Robertson et al (USPN 6,390,790).

Price discloses an air pumping unit having a housing (outer structure of Fig. 11) and an electric motor (104) which drives plural diaphragm pumping elements at opposite ends thereof. The pump chambers deliver to an outlet chamber having plural solenoid valves (216, 218) therein. Price does not disclose that housing interior is pressurized, or vibration isolation elements. Robertson et al disclose a similar diaphragm pumping device having a pressurized housing (12), an electromagnetic motor (60) which drives diaphragms (44) at opposite ends, valve heads having an inlet and an outlet valve are mounted at each end of the housing (see Fig. 4). The flow in Robertson goes thru the common lower inlet manifold (Fig. 4) and then passes thru the motor chamber upon discharge to flow to the cover and out the fitting (15). Robertson et al note that this arrangement is an improvement over prior art arrangements such as shown in Fig. 3. Robertson also discloses isolation mounts (56). At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the pump arrangement of Price with the Pump arrangement of Robertson et al in order to obtain a more durable pump with a cooled motor as taught by Robertson. Also such an arrangement results in a simpler pump since the linearly displaceable motor does not require the cam plates as shown in Price.

Claims 5-14 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Price in view of Robertson et al as applied to claim 1 above, and further in view of Kimura et al (USPN 4,859,152).

As discussed above price in view of Robertson et al discloses the invention substantially as claimed but does not disclose the reciprocating member having permanent magnets and two wire coils, the housing being assembled by retention tabs or filter elements. Kimura et al discloses a similar double diaphragm pump with a reciprocating member having permanent magnets (35, 35a) and two wire coils(32, 32a). At the time of the invention it would have been obvious to one of ordinary skill in the art o substitute the electromotive drive of Kimura et al for the electromotive drive of Robertson et al as a well known and equivalent reciprocating pump arrangement which is relatively compact in design.

The examiner gives official notice that retention tabs are well known housing attachment mechanisms and the use of filters is well known. At the time of the invention it would have been obvious to use attachment tabs as a well known and simple housing assembly mechanism which would not require tools and to use a filter to prevent debris from entering the pump and from being passed to the location to which the air is being pumped.

Allowable Subject Matter

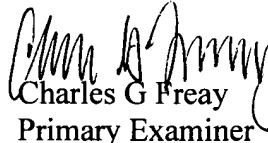
Claims 4, 15, 16, 18, 19 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles G. Freay whose telephone number is 571-272-4827. The examiner can normally be reached on Monday through Friday 8:30 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe can be reached on 571-272-4444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Charles G Freay
Primary Examiner
Art Unit 3746

CGF
July 20, 2006